REMEDIAL DESIGN AND ASBESTOS ABATEMENT WORK PLAN
TUBMAN ELEMENTARY SCHOOL
WASHINGTON, D.C.

PREPARED FOR:

US ARMY CORPS OF ENGINEERS
OFFICE ENGINEERING BRANCH
CENTRAL WASHINGTON OFFICE
McMILLIAN WATER TREATMENT PLANT
2500 1ST STREET NW
WASHINGTON, D.C. 20001-1022

PREPARED BY:

IT CORPORATION
9300 LEE HIGHWAY
FAIRFAX, VA 22031-1200

JULY 1999

Signature Page

The following asbestos abatement design was prepared and reviewed by the following personnel.

Michael Vollo
AHERA Asbestos Abatement Project Designer

Jeff Seltzer, P.E.
Project Manager

Gary Wyrwa
CQC System Manager

Dave Root, C.I.H.
Task Order Certified Industrial Hygienist

Table of Contents

List of Figures

List of Appendicies

1.0 Definitions

Abatement - Procedures to control fiber release from asbestos-containing materials. Includes removal and encapsulation of asbestos-containing materials.

ACGIH - American Conference of Governmental Industrial Hygienists - 6500 Glenway Avenue, Building D-5 - Cincinnati, Ohio 45211

AIHA - American Industrial Hygiene Association - 2700 Prosperity Avenue, Suite 250, Fairfax, VA 22031

Airlock - A system for permitting ingress and egress with minimum air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways separated by a distance of at least 3 feet such that one passes through one doorway into the airlock, allowing the doorway sheeting to overlap and close off the opening before proceeding through the second doorway, there by preventing flow-through contamination. Two overlapping polyethylene sheets will protect each doorway.

Air monitoring - The process of measuring the fiber content of a known volume of air collected during a specified period of time. The procedure normally utilized for asbestos follows the NIOSH Method 7400 Standard Analytical Method for Asbestos in Air. Where applicable, electron microscopy methods may be utilized for air clearance monitoring.

Air Sampling Professional (or on site air monitor) - The professional contracted to provide job oversight; enforcement of this specification and to conduct area and clearance air monitoring. This individual will be either a Certified Industrial Hygienist or have extensive experience in asbestos air sampling and abatement oversight. At a minimum, this individual should have successfully completed an EPA approved asbestos abatement air monitoring/project-monitoring course. This person shall have the authority to resolve inconsistencies in the specifications.

Amended water - Water to which a surfactant has been added.

ANSI - American National Standards Institute - 1430 Broadway, New York, New York 10018

Asbestos means the asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite - grunerite (amosite), anthophyllite, and actinolite, and tremolite.

Asbestos-containing material (ACM) - Any material that contains more than 1% asbestos by volume.

Asbestos-containing waste material - Asbestos containing material or asbestos contaminated objects requiring proper disposal.

ASTM - American Society for Testing and Material - 1916 Race Street, Philadelphia, PA 19103

Authorized visitor - Any representative of a regulatory or other agency representative having jurisdiction over the project.

Certified Industrial Hygienist (CIH) - An industrial hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene. (See AIHA definition for address.)

Clean room - An uncontaminated area or room that is a part of the worker decontamination enclosure system with provisions for storage of worker's street clothes and clean protective equipment.

Curtained doorway - A device to allow ingress or egress from one room to another while permitting minimal air movement between the rooms, typically constructed by placing two overlapping sheets of plastic over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of one sheet along one vertical side of the doorway and securing the vertical edge of the other sheet along the opposite vertical side of the doorway. Other effective designs are permissible.

Decontamination enclosure system (decon) - A series of connected rooms, separated from the work area and from each other by air locks, for the decontamination of workers and equipment.

Demolition - The wrecking or taking out of any load-supporting structural member of a facility and any related razing, removing, or stripping of asbestos product.

Encapsulant - A liquid material which can be applied to asbestos containing material and/or abated facility component which controls the possible release of asbestos fibers from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant).

Encapsulation - The application of an encapsulant to asbestos containing materials and/or abated facility component to control the release of asbestos fibers into the air.

Enclosure (containment) - The construction of an air-tight, impermeable, temporary barrier around asbestos-containing material to control the release of asbestos fibers into the air.

EPA - U.S. Environmental Protection Agency - 401 M Street S.W., Washington, D.C. 20460

Equipment decontamination enclosure system - That portion of a decontamination enclosure system designed for controlled transfer of materials and equipment into or out of the work area.

Equipment room - A contaminated area or room that is part of the worker decontamination enclosure system with provisions for storage of contaminated clothing and equipment.

Facility component - Any pipe, duct, boiler, tank, reactor, turbine or furnace at or in a facility or any structural member of a facility.

Fixed object - A piece of equipment or furniture in the work area which cannot be removed from the work area.

Friable asbestos material - Any asbestos-containing material that, when dry, can be crumbled, pulverized, or reduced to a powder, by hand pressure, including an ACM that will or can reasonably be expected to become friable as a result of the asbestos abatement activity.

HVAC - Heating, ventilation and air conditioning system.

HEPA filter - A high efficiency particulate air filter capable of removing particles greater than 0.3 microns in diameter with 99.97% efficiency.

HEPA vacuum - A vacuum system equipped with HEPA filtration.

Holding area - A chamber in the equipment decontamination enclosure located between the washroom and an uncontaminated area. The holding area comprises an airlock.

MSDS - Material Safety Data Sheet.

Movable object - A piece of equipment or furniture in the work area that can be removed from the work area.

NESHAPS - The National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61).

NIOSH - The National Institute of Occupational Safety and Health, CDC - NIOSH, Building J N.E. Room 3007, Atlanta, GA 30333

NIOSH 7400 Method - Asbestos Air Sampling Methodology performed by Phase Contrast Microscopy

NIOSH 7404 Method - Asbestos Air Sampling Methodology performed by Transmission Electron Microscopy (TEM).

OSHA - The Occupational Safety and Health Administration, 200 Constitution Avenue, Washington, D.C. 20210

Outside air - The air outside buildings and structures (ambient air).

Plasticize (poly) - To cover floors and walls with plastic sheeting as herein specified (6 mil).

Prior experience - Experience required of the contractor on asbestos projects of similar nature and scope of the USACE job. This is to ensure capability of performing the asbestos abatement in a satisfactory manner. Similarities addressed shall be in areas related to material composition, project

size, abatement methods required, number of employees and the engineering, work practice and personal protection controls required.

Removal - The stripping of any asbestos containing materials from surfaces or components of a facility.

Shower room - A room between the clean room and the equipment room in the worker decontamination enclosure with hot and cold or warm running water controllable at the tap and suitably arranged for complete showering during decontamination.

Staging area - Either the holding area or some area near the waste transfer airlock where containerized asbestos waste has been placed prior to removal form the work area.

Structural member - Any load-supporting member of a facility, such as beams and load-supporting walls or any non-load-supporting member, such as ceilings and non-load-supporting walls.

Surfactant - A chemical wetting agent added to water to improve penetration.

USACE - US Army Corps of Engineers

Visible emissions - Any emissions-containing particulate asbestos material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.

Waste transfer airlock - A dual chamber decontamination system utilized for transferring containerized waste from inside to outside of the work area.

Wet cleaning - The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with water and afterwards thoroughly decontaminated or disposed of as asbestos contaminated waste.

Work area - Designated rooms, spaces, or areas of the project in which asbestos abatement actions are to be undertaken or which may become contaminated as a result of such abatement actions. A contained work area is a work area that has been sealed, plasticized, and equipped with negative air units and a decontamination enclosure system. A non-contained work area is an isolated or controlled-access work area that has not been plasticized nor equipped with a decontamination enclosure system.

2.0 Scope of Work

The work specified herein shall be the removal of asbestos-containing materials by a competent person trained, knowledgeable and qualified/certified in the techniques of abatement, handling and disposal of asbestos-contaminated materials. Subsequent cleaning of contaminated areas will comply with all applicable Federal, Local regulations and this Work Plan.

The Contractor shall supply all labor, materials, services, insurance, permits and equipment necessary to carry out the work in accordance with all applicable federal, state and local regulations and these specifications.

In the course of work taking place at theTubman Elementary School, asbestos-containing materials have been identified and inventoried by EA Engineering Sciences & Technology Inc. Consultants of Sparks, Maryland. The scope of work for this specification is to address the asbestos-containing materials and debris found at this site. The scope of work for this project is divided into the following 7 areas:

Area No. 1) Construction of a full containment with negative air and the removal of 1,020 square feet of asbestos-containing acoustical spray-on duct insulation, 925 square feet of overspray and 550 square feet of asbestos-containing ceiling tiles and associated grid from Hallways 191 and 192

Area No. 2) Construction of a full containment with negative air and the removal of 150 square feet of asbestos-containing acoustical spray-on duct insulation, 780 square feet of overspray and 290 square feet of asbestos-containing ceiling tiles and associated grid from Hallway 193

Area No. 3) Construction of a full containment with negative air and the removal of 150 square feet of asbestos-containing acoustical spray-on duct insulation, 255 square feet of overspray and 180 square feet of asbestos-containing ceiling tiles and associated grid from Hallway 195

Area No. 4) Construction of a full containment with negative air and the removal of 470 square feet of asbestos-containing acoustical spray-on duct insulation, 625 square feet of overspray and 435 square feet of asbestos-containing ceiling tiles and associated grid from Hallway 196

Area No. 5) Construction of a full containment with negative air and the removal of 60 square feet of asbestos-containing acoustical spray-on duct insulation, 130 square feet of overspray and 100

square feet of asbestos-containing ceiling tiles and associated grid from Hallway 290

Area No. 6) Construction of a full containment with negative air and the removal of 75 square feet of asbestos-containing acoustical spray-on duct insulation, 175 square feet of overspray and 145 square feet of asbestos-containing ceiling tiles and associated grid from Hallway 390

Area No. 7) Construction of a full containment with negative air and the removal of 147 square feet of asbestos-containing acoustical spray-on duct insulation, 340 square feet of overspray and 230 square feet of asbestos-containing ceiling tiles and associated grid from Room 133 (B,C,D,E&H)

2.1 Work Schedule

The asbestos abatement contractor will provide sufficient number of workers so that the work may be completed during weekday and weekend shifts. Daily work schedule can be double 12-hour shifts. Award date for this contract is expected on or about July 29, 1999 with the abatement beginning immediately. All work must be completed by (TBA)_____. Work must be complete so that final air samples (by AHERA aggressive TEM) are below 70 structures per square millimeter. The abatement contractor is required to attend a Pre-Construction Meeting to be scheduled by IT. This meeting will occur prior to the start of abatement activities.

2.2 Applicable Standards and Guidelines

2.2.1 General Requirements

The most recent edition of any relevant regulation, standard, document or code shall be in effect. When conflict among the requirements or with these specifications exists, the most stringent requirements shall be utilized.

Work shall begin as soon as practical after the awarding of the contract and receipt of the necessary permits by the Contractor. The contractor is expected to follow all health and safety procedures required by IT Corporation. The abatement site supervisor shall speak English.

2.2.2 Specific Requirements

The Contractor shall follow the appropriate regulations included in the following:

- Occupational Safety and Health Administration (OSHA)

Title 29 Code of Federal Regulations Section 1926.58 - Construction Standard for Asbestos.

- Title 29 Code of Federal Regulations Section 1910.134 - General Industry Standard for Respiratory Protection.
- Title 29 Code of Federal Regulations Section 1926 Construction Industry.
- Title 29 Code of Federal Regulations Section 1910.20 Access to Employee Exposure and Medical Records.
- Title 29 Code of Federal Regulations Section 1910.1200 Hazard Communication.
- Title 29 Code of Federal Regulations Section 1910.1001 and 1926.1101.

Environmental Protection Agency (EPA)

- Title 40 Code of Federal Regulations Part 61 Subparts A and M (Revised Subpart B) National Emission Standard for Asbestos.

All District of Columbia Safety Codes, Labor Codes, rules and regulations, unless otherwise instructed by IT or the USACE.

In addition, as required by the USACE, the USACE-Baltimore District must receive a copy of the waste manifest within 10 days of receipt.

SECTION 2.0
TABLE 1 Paint Chip Sample Results
TUBMAN ELEMENTARY SCHOOL

Paint Sample		Location of Sample	Lead by Weight (%)	Building Component	Condition
Number	**Description**				
HTES PC 01	Off-white	Health Suite	0.1068	Wall	Fair
HTES PC 02	Off-white	Teachers Lounge	0.2329	Ceiling	Fair
HTES PC 03	Brown	Kindergarten	0.0034	Wall	Fair

The Federal guideline for lead paint chips is 0.5% by weight.

Tubman Elementary School (328)
Capital Improvement Project (CIP)
Bathroom Facilities Upgrade (WO# 714)
POC: McKissack & McKissack
May 22, 2000

CIP SCOPE OF WORK (SOW):

Boggs Environmental Consultants (BEC) reviewed the Bathroom Facilities Upgrade scope of work to determine CIP SOW locations and identify potential disturbance to lead painted surfaces at Tubman Elementary School, 3101 13th St., NW, Washington, District of Columbia. The Bathroom Facilities Upgrade scope of work may include, but not be limited to, the painting and repair of plaster, the removal and replacement of existing toilets, fixtures, partitions, door, door hardware, and doorframes, water fountain repair or replacement, ceiling tile repair or replacement, and/or carpet or floor tile replacement. Patch and repair activities of the wall, ceiling, and floor surfaces must be conducted to correct existing defects or damage associated with removal operations, and/or damage created due to new construction.

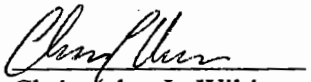
CIP SOW- LEAD IMPACT SUMMARY:

BEC conducted an inspection of the proposed work areas for the presence of lead-based paint finished building components. Although the paint chip samples collected tested below Federal Guidelines for lead, OSHA recognizes lead at any level to be hazardous.

NOTE: The above NESHAP inspection was characterized by close visual inspection of interior accessible areas. No building structures/materials were demolished to evaluate inaccessible areas. If the renovation contractor encounters suspect materials during destructive demolition, all work must stop and suspect materials must be sampled and analyzed before proceeding with the renovation work.

When lead-based paint has been positively identified, the contractor must perform work in accordance with OSHA Lead in Construction Standard 1926.62.

This report has been written by:



Christopher L. Wiltison, IH

District of Columbia Lead Poisoning Prevention Division Licenses-

Business Entity License Number	DC99-179	Expires 28 Aug 2000
Inspector/Risk Assessor License Number	DC00-533	Expires 31 July 2000

The inspection was performed in accordance with US Department of Housing and Urban Development "Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing", June 1995 (rev. 1997) and District of Columbia work practice standards for conducting lead – based activities "The Lead-Based Paint Abatement and Control Act" (D.C. Law 11-221, Jan 98).

SECTION 2.0
TABLE 1
TUBMAN ELEMENTARY SCHOOL

Homogeneous Areas		Location	Asbestos Content by (%)	Condition
Number	Description			
EA-13	TILE GROUT, gray,	BATHROOMS	NAD	INTACT
EA-14	WHITE PLASTER	BATHROOMS	NAD	INTACT/ FAIR
EA-40	BROWN COAT, associated with EA-14	BATHROOMS	NAD	INTACT/FAIR

NAD = No Asbestos Detected
PACM = Presumed Asbestos Containing Material
ND = Not Determined
ACM = Asbestos Containing Material

SECTION 1.0
Tubman Elementary School (328)
Capital Improvement Project (CIP)
Bathroom Facilities Upgrade (WO# 714)
POC: MCKISSACK & MCKISSACK
May 22, 2000

CIP SCOPE OF WORK (SOW):

Boggs Environmental Consultants (BEC) reviewed the Bathroom Facilities Upgrade Scope of Work to determine CI SOW locations and identify potential asbestos-containing materials disturbance activity at Tubman Elementary Schoo 3101 13th Street, NW, Washington, District of Columbia. The Bathroom Facilities Upgrade scope of work may include but not be limited to, the painting and repair of plaster, the removal and replacement of existing toilets, fixtures, partitions door, door hardware, and doorframes, water fountain repair or replacement, floor and wall tile repair or replacement, glas replacement and associated caulking and/or glazing removal, and repair of TSI piping. Patch and repair activities of th wall and ceiling surfaces shall be conducted to correct existing defects or damage associated with doorframe remova operations, and/or damage created due to new construction.

CIP SOW- ASBESTOS IMPACT SUMMARY:

BEC conducted an inspection of the proposed work areas for the presence of asbestos-containing materials. BEC ha determined no asbestos containing building material are present in the work area. The remaining materials identified to b disturbed are Non ACM CMU walls, plaster, wallboard, and tile grout (see table).

NOTE: The above NESHAP inspection was characterized by close visual inspection of interior accessible areas. N building structures/materials were demolished to evaluate inaccessible areas. If the renovation contractor encounte suspect materials during destructive demolition, all work must stop and suspect materials must be sampled and analyz before proceeding with the renovation work.

This report has been written by:

Erik D. Zimmers, Environmental Health and Safety Specialist
US EPA AHERA Inspector
Certification Number 045712 Expires 28 January 2001

- The inspection was performed in accordance with 40 CFR Part 61, Subpart M, (NESHAP).
- BEC has based our determination in part upon review of "Preliminary Asbestos Inspection Report" (Engineerir Science, and Technology, Incorporated, August, 1999), additional plaster and brown coat information (faxes fr Engineering, Science, and Technology, Incorporated, 17 November, 1999 and 23 December, 1999).